

ABSTRACTS

of selected publications of Assoc. Prof. Antonio Dachkov Antonov for participation
in the concourse for the academic position "Professor"

1.

Title	EFFECTIVENESS OF VARIATIVE-PLAY TRAINING FOR 10-12 YEAR-OLD CHILDREN PRACTICING HOCKEY SYSTEMATICALLY
Indicator	<i>PhD Thesis</i>
Author(s)	Antonio Dachkov Antonov
Abstract	<p>Hypothesis: Experimental implementation of the game method and variative training in hockey in Bulgaria, as well as mixed-group training, although applied in practice on a national and international level, is not yet an issue that has been studied scientifically, methodologically and experimentally. Presumably, developing a methodology for training in hockey, based on basic didactic principles and including different variative means and game forms of mini-hockey, will also contribute to the significant development of physical qualities and the effectiveness of the technique. It is also presumed that training in mixed groups for children up to 12 years of age is appropriate, based on the equalized motor abilities of boys and girls. The principle requirements of the experimental methodology will improve the effectiveness of the training process and the competitive activity, and will enable the development of standards for control and evaluation of sports training.</p> <p>The aim of the research is to study, through development of a methodology of training in hockey in mixed groups with priority use of variative and game methods, the effectiveness of the training process and competitive activity in 10-12-year-old children, systematically practicing hockey.</p> <p>The object of the study were boys and girls from the cities of Pleven, Sofia, and Cherven Bryag, born in 1991 and 1992, included in organized hockey classes in Children and Youth Hockey Clubs and Youth Hockey Clubs, as follows: Kram Complex – Sofia, NSA – Sofia, Lokomotiv – Cherven Bryag and Pleven, who were 10 to 12 years of age at the time of the pedagogical experiment.</p> <p>The process of experimental work, which lasted four years (from 2001 to 2004), involved 88 hockey players. The latter, depending on their age, passed the obligatory three tests – initial (at age 10), basic (at 11) and final (at 12).</p> <p>The adolescent athletes from HC Lokomotiv – Cherven Bryag and HC – Pleven who were included in the experimental groups underwent two years of obligatory training according to the optimized methodology, while divided into three training groups.</p> <p>For the purpose of the research, two control groups (one consisting of boys and one – of girls) were formed with the children practicing hockey from the city of Sofia who were training in their clubs according to the training methodology established in Bulgaria.</p>

	<p>Conclusion</p> <p>As a result of the in-depth research, experimental and scientific-applied activities, the developed methodology for training in hockey with priority use of the variative and game methods has been successfully applied in practice. The developed system of simplified, modified games and various forms of mini-hockey in the competitive activity of the hockey clubs and BFHF is well implemented. A normative system for control and evaluation of the sports training of hockey players aged 10-12 has been implemented in the practice and still serves as a test base today.</p> <p>Mixed learning as an approach for working with children aged 10-12 is still embedded in the training process and competitive activities of BFHF.</p>
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2.

Title	HISTORY OF HOCKEY
Indicator	<i>Habilitation thesis – monograph</i>
Author(s)	Antonio Dachkov Antonov
Abstract	<p>The monograph examines the emergence and evolution of hockey from the antiquity to the medieval and modern times. The most important part of the work are the analyses and summaries of the results from the development of the game during the contemporary epoch – the era of modern hockey, on a global and national scale.</p> <p>The prerequisites for the emergence and development of hockey, not only globally but nationally, are traced, analyzed and summarized in chronological order – from the emergence of the game in Bulgaria, through the establishment of the first clubs, the foundation of the Bulgarian Field Hockey Federation and the development of the sport after the establishment of the federation.</p> <p>The study is mainly focused on the achievements in the development of the game after the advent of “contemporary – modern hockey”. Another focal point of this research is the contribution of sports organizations – international, continental, regional, and national – to the dynamic pace of development, results achieved, rankings, and organized forums through which hockey has been promoted, advertised, and globalized as a sport.</p> <p>The monograph has also explored the invaluable contribution of NSA “Vasil Levski” for the dynamic development of hockey as an Olympic sport in Bulgaria at the end of the XX and the beginning of the XXI century.</p> <p>The monograph is intended for use by students, teachers, and scholars in the field of hockey and historical science, as well as by coaches, athletes, referees, and fans of the hockey game.</p>

3.

Title	KINEMATIC STRUCTURE AND CHARACTERISTICS OF THE “DRAG FLICK” FIELD HOCKEY TECHNIQUE
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov
Abstract	PURPOSE: The aim of our research is to reveal the phase structure of the

	<p>“Drag Flick” (DF) technique during the execution of a penalty corner, as well as to provide a kinematic characterization of the basic moments and phases of the movements of the body and the stick.</p> <p>METHODS: The subject of the study were goal scorers and performers of penalty corners.</p> <p>In our research, we used the following methods:</p> <ul style="list-style-type: none"> • Observation; • Video recording; • Video-computer analysis of technical actions; • Analysis of videograms and kinograms of DF. <p>RESULTS: The study describes the three-phase structure of DF and provides important information about the model indicators characterizing the technique of execution. Some of the limit values characterizing the individual moments of the three-stage phase structure overlap with those of the four-phase structural models.</p> <p>CONCLUSIONS: The DF technique in the execution of a penalty corner goes through three phases: preparatory, executive, and final. The overall movement is realized by performing at least 6 steps – 2 or more accelerating ones, a rotary step, a back cross step, an executive step and finally – a support step on the right foot. The described 14 moments reflect the motor structure underlying the DF technique.</p>
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4.

Title	INFLUENCE OF THE “PUSH & FLICK” METHODOLOGY ON THE ACCURACY OF THE INDOOR HOCKEY PENALTY CORNER SHOOTING
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov, Dafina Zoteva, Olympia Roeva
Abstract	<p>The penalty corner (PC) is one of the most important game situations in hockey (both outdoors and indoors), which results in 30 – 40% of all goals. The aim of this paper is to study the influence of the innovative experimental methodology on the dynamics in the development of indicators characterizing the accuracy of shooting when performing PC in the potentially effective goal zones. Through the application of InterCriteria Analysis (ICrA), the research team has sought to establish relationships and directions of dependencies between indicators reflecting the accuracy of zone shooting.</p> <p>Four elite female indoor hockey players from the team of the National Sports Academy in Bulgaria, participants in the European Indoor Hockey Clubs Challenge, have been involved in the examination sessions. According to the requirements of the innovative experimental “Push & Flick” methodology, the duration of the specialized training has been set to 16 weeks. Each player has performed 4,800 shootings, or approximately 300 shootings each week. Tests have been carried out at the beginning (the first week) and at the end (the sixteenth week) of the experiment in order to determine the accuracy of the shooting – push/flick from a penalty corner spot (9 meters, central from the goal line).</p> <p>We have used InterCriteria Analysis and Variance Analysis to analyze the</p>

	<p>results.</p> <p>The results of the study provide valuable information related to the training and specialization of elite hockey players profiled in the execution of a penalty corner.</p>
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5.

Title	DEPENDENCIES BETWEEN MODEL INDICATORS OF THE BASIC AND THE SPECIALIZED SPEED IN HOCKEY PLAYERS AGED 13-14
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov
Abstract	<p>PURPOSE: The aim of our research is to establish the degrees and directions of dependence between the main forms of manifestation of the basic and the specialized speed. The subject were 20 boys, born in 2005 and 2006.</p> <p>METHODS: Through tests and Variance Analysis (VA) we determined the level of the main forms of the basic and the specialized speed, and through Correlation Analysis (CA) and InterCriteria Analysis (ICrA) we established the existence of possible correlations and degrees of dependence between them.</p> <p>RESULTS: By using VA, we were able to characterize the average level, the level of dispersion and the distribution of the values of the studied indicators. Correlations and dependencies were established by using CA, traditionally applied in sports science. We also applied the innovative ICrA in order to confirm or reject the established correlations, directions, and degrees of dependence.</p> <p>CONCLUSIONS: The conducted CA and ICrA have shown that the means for the development of the basic linear speed (BLS) and the specialized linear speed (SLS) do not have a significant impact on the development of the special complex speed. ICrA has also indicated a lack of correlations and dependencies between BLS and SLS, which, however, has not been confirmed by CA.</p>

6.

Title	ANALYSIS AND DETECTION OF THE DEGREES AND DIRECTION OF CORRELATIONS BETWEEN KEY INDICATORS OF PHYSICAL FITNESS OF 10-12-YEAR-OLD HOCKEY PLAYERS
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov
Abstract	<p>This paper presents an investigation of the relationships and correlations between the 11 indicators of physical fitness, the level of which has a leading role in the sports training of 10-12-year-old hockey players. The obtained results showed a tendency of a slight increase in the existing correlations – from weak to moderate, from moderate to significant, and</p>

	from significant to strong in the first year of the experiment (age 10-11). Such correlation was also observed in the second year (age 11-12), when even very strong correlations were found between 4 indicators for boys and 3 for girls.
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7.

Title	INFLUENCE OF THE“PUSH & FLICK” METHODOLOGY ON THE BALL SPEED DURING THE PENALTY CORNER SHOOTING IN INDOOR HOCKEY
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov, Dafina Zoteva, Olympia Roeva
Abstract	<p>Indoor hockey is an official non-Olympic discipline, regulated by the International Hockey Federation (FIH), practiced in a hall with a handball size pitch. The main objective of the game is victory, achieved by scoring more goals than the opponent. The format of the game was created in the 1950s and 1960s. Later, in 1966, the first Indoor hockey rules were published. In 1968, the World Headquarters officially recognized the discipline as an integral part of hockey.</p> <p>The penalty corner is one of the most important game situations in hockey (both outdoor and indoor field hockey) with 40% of all goals resulting from this tactical situation. This number may reach 46% or even 68%.</p> <p>The aim of this paper is to study the influence of the indoor hockey “Push & Flick” methodology on the ball speed improvement during the penalty corner shooting in the potentially effective goal zones. Using Variation Analysis and InterCriteria Analysis, the research team has sought to establish values and possible relations and dependencies between indicators reflecting the ball speed of zone shooting.</p> <p>Four elite indoor hockey players from the team of the National Sports Academy in Bulgaria, participants in the European Indoor Hockey Clubs Challenge, have been involved in the experiment. According to the requirements of the experimental “Push & Flick” methodology, the duration of the specialized training has been set to 16 weeks. Each player has performed 4,800 shootings, or approximately 300 shootings each week. Tests have been carried out at the beginning (the first week) and at the end (the sixteenth week) of the experiment in order to determine the speed of the ball during the shooting – push/flick from a penalty corner spot (9 m, central from the goal line).</p> <p>The speed of the ball has been measured with a sports radar Ra-Vid Pro Sport™ (Accuracy: ± 0.1 km/h, Speed range: 1–480 km/h, Stopwatch within 1/100 s, 10 m sec acquisition time, 12-degree radar beam, 1200 to 38.4 K baud, Available in mph or km/h, Maximum Range, Sports: 400–500 ft., Autos: 1.75 miles) located just behind the net and the corresponding shooting areas.</p> <p>This report will demonstrate the effectiveness of the specialized methodologies related to the preparation of penalty corners specialists. In addition, InterCriteria Analysis applied for processing the data reveals important dependencies related to the refinement of the technique of pushing and flicking.</p>

8.

Title	FIELD HOCKEY IN KINDERGARTENS – OPPORTUNITIES PROSPECTS AND CHALLENGES
Indicator	<i>Papers and reports, published in scientific journals, referenced and indexed in world-renowned databases of scientific information</i>
Author(s)	Antonio Antonov
Abstract	<p>The main objective of our research is to reveal the opportunities (i.e., potential and resources), the prospects (i.e. the expected results and benefits) and the challenges (i.e. the difficulties, the threats and the ways to overcome them) in the realization of the additional pedagogical service under the MYS Program and the Club Contract.</p> <p>Results & Opportunities Through the implementation of the Program and the Contract, children are given the opportunity to develop their motor skills and motivation for independent motor activity through active sport activities aimed at improving their health, physical and mental capacity.</p> <p>The project also form pedagogical skills, habits and motivation for independent work in NSA students – field hockey specialists, who apply in practice their methodical (3rd and 4th year of their study) and coaching practice (4th year of their study) as an additional pedagogical service in kindergartens.</p> <p>Target group and pedagogical resource During the preparation and implementation of the projects under the Program (2013/2014 and 2014/2015) and the Contract (2015/2016), specific targeting was the selection of children and their dividing by groups according to the parameters set in the Project (see Table 1). The target group included 4-6-year-old, and in 2016 – mostly 6-year-old children from the pre-school groups who had one or two years of training under the Program.</p> <p>In conclusion, we would like to summarize that the projects under the Program and the Contract, using various forms and means of sport, provide the necessary health status and motor experience, form adequate attitude towards sport, and improve organizational skills and motivation for individual sport activities of the children in the kindergarten age group.</p>

9.

Title	FIELD HOCKEY NOW AND THEN IN SERBIA
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Markovic, Z., Antonov, A., & Ignjatovic, A.
Abstract	<p>Introduction The first traces of field hockey were found in Egypt 4000 years ago, which is confirmed by the relief found in the tomb in the village of Beni Hasan. The two players with the clubs were represented fighting for the ball. The contemporary field hockey originated in London in 1861. It became an Olympic sport for men in 1908 and for women in 1980. On the initiative of the Physical Board of Belgrade and a few students of the Faculty of Physical Education, the first Serbian field hockey club <i>Cukaricki</i> was found</p>

	<p>in 1949.</p> <p>Methods</p> <p>For the collection of the relevant data, the archives of Yugoslavian and Serbian Field Hockey Association were used. An analysis of the contents was carried out.</p> <p>Results with discussion</p> <p>Hockey first appeared in the territory of ex-Yugoslavia in Zagreb. The Croatia Hockey Association was founded in 1936. The first clubs founded in Serbia were <i>Cukaricki</i> in Belgrade (1949) and <i>Elektricna Centrala</i> in Subotica (1949). They were followed by <i>BASK</i> (1953), <i>Zvezda</i> (1954), <i>Toplana</i> (1958), <i>Zorka</i> (1963), <i>Suboticatrans</i> (1963), <i>Suboticanka</i> (1965), <i>Fidelinka</i> (1966), <i>29th November</i> (1966), <i>Student</i> (1967), and <i>Elektrovojdina</i> (1967). The most prominent success of the Yugoslavian National team was the first place in the 8th Mediterranean Sport Games in 1979 in Split. In the Yugoslavian Championship, the primacy was held by Croatian clubs. In 1968 the Championship was won by <i>HK Suboticanka</i>, and until 1991 <i>Suboticanka</i> was the Yugoslav Champion eleven times. That year the Yugoslav Championship was ceased. Since 2007, the Serbian Championship has been held. At present, in Serbia there are nine clubs in female and five in male categories.</p> <p>Conclusion</p> <p>Field hockey has never had adequate facilities as some other sports. The development of field hockey in Serbia can be started only by the enthusiasts who keep this sport from extinction and oblivion with the help of students and professors of the Faculty of Sport and Physical Education in Serbia. The basic directions of the development of field hockey in Serbia were presented in the Forum of Eastern European countries held in 2017 in Jagodina and accepted by the European Hockey Federation.</p>
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10.

Title	ATTITUDES OF TEACHERS AND PROFESSORS ABOUT INCLUSION IN PHYSICAL EDUCATION TEACHING
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Markovic, Z., Ignjatovic, A., Antonov, A. , & Milanovic, S.
Abstract	<p>Introduction: According to the Serbian law on foundations of the education and upbringing (2009), everyone has the right to education and upbringing without discrimination and separation by gender, race, social, cultural, religious or any other class, a place of residence or health condition, disabilities (physical, cognitive, emotional). All children have right to physical education, so in the frame of basic teaching systems, physical education is represented as a compulsory subject in 80% of the primary schools in the world. It is expected that the physical education class could be one of the most supported and the most productive element of the inclusive process in school. The aim of the work was to investigate teacher and professor statements about inclusion in teaching physical education in primary school age.</p> <p>Methods: The research has transversal character, and it was realized in the second term of 2017/2018 school year in 18 primary schools on the territory</p>

	<p>of the region of Pomoravlje. The research involved 60 teachers and 60 professors of Physical education. For the estimation of attitudes of teachers and professors of Physical education, an instrument from the previous research was used, the Greek scale <i>Attitudes towards Teaching Individuals with Physical Disabilities in Physical Education</i> (Kudlacek, 2002), which was filled in by teachers during regular Physical education lessons.</p> <p>Results: The largest number of teachers and professors have worked in school between ten and twenty years, and the least ones are those who have worked for five years. Higher professional education prevails in the relationship between higher and master education, where the latter is less represented. There are 81.7% professors and 60,7% teachers who have not attended inclusion seminars. There are only 8.7% professors and 49.2% teachers who have previous experience in working with children with disabilities. Most of the teachers (71.4%) think that they are competent in involving children who are disturbed in development, in comparison to professors (41.4%). Including students with special needs in classes will make teaching much more complicated, and 49.0% of the teachers think that they are not competent enough, while 41.4% of the teachers do think they are competent. 48.8% of the professors and 34.6% of the teachers think they are competent in including students with disturbed development in order to encourage students to learn how to help others. Most of the professors think that their inclusion will make other students more tolerant and think of themselves as competent. Inclusion in the process of regular physical education will have a positive effect in the personality development of students with disturbed development; however, 49.4% of professors and 54.6% of teachers think that they are not competent enough. Those who think they are competent enough to stop discrimination of students disturbed in development are 34.7% of the professors and 35,7% of the teachers. The same relation is observed in the statement that the flow and the dynamic of classes would slow down. Active participation of students who are disturbed in development would encourage students to achieve better knowledge about these people, and 43.3% of professors and 36.2% of teachers think of themselves as competent enough to achieve that. The same percents affirm that this inclusion can teach other students to be more co-operative.</p> <p>Conclusion: The general conclusion indicates that the situation in primary school physical education lessons is very complex considering inclusion, and that the attitudes of the teachers are statistically significantly different in four out of ten statements.</p>
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11.

Title	STRUCTURE AND MODEL OF ANNUAL SPORT TRAINING OF ELITE WOMEN HOCKEY PLAYERS IN BULGARIA AND ITALY
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Chavdarov, S., A. Antonov
Abstract	The structure and the model of preparation and realization of the planned training exercises in the annual plan are the main criteria and factors for the efficiency of the educational process.

The preparation of elite hockey players in all stages of the training process has many directions; therefore, it is very important to find a rational sequence and optimal combinations when using training exercises in order to achieve maximum effect.

Structurally, the process of sports preparation is based on objectively existing regularities that determine sport mastery. These regularities define the factors, the efficiency and the results of the competitive sport activity, the optimal structure of the sports training of hockey players, the specific adaptation with the various exercises and methods of pedagogical impact, the individual characteristics of the hockey players, the stages of a multi-annual preparation and other and other relevant aspects

Introduction

Revealing the structure and model of sports training of elite hockey players in Bulgaria and in Italy is a problem the solving of which would improve the effectiveness of planning, both short and long term.

In this regard, we set the **aim** to reveal – through research, analysis and summary of the available literary sources related to educational and practical training as well as methodology, including training schedules, programs and reports – the structure and model indicators characterizing the effectiveness of sports training of elite hockey players in Bulgaria and Italy within one sports year.

The study has accomplished the following **tasks**:

1. Revealing the structure, the model and the model indicators – quantitative and qualitative, characterizing the sports training of elite hockey players in Bulgaria and Italy;
2. Analysis of the efficiency of the training process and the competitive activity in the system of elite women's hockey in Bulgaria and Italy.
3. Comparative analysis between established model indicators characterizing sports training in Bulgaria and Italy.

The **subject** of the study was the annual sports training of 12 elite hockey players from Bulgaria (National Team and HC NSA) and 22 ones from Italy (Lorenzoni – Bra) in the period 2010-2012. The study **focuses** on a number of factors, such as structure, indicators, and realization, which influence the efficiency of the annual sports training.

Results

Bulgaria

Within the course of 52 weeks, 23 training, 20 competition, 5 camp and 4 holiday microcycles are planned. Out of 365 days a year, 230 days are training days (including camps), 55 are competition days, and 80 are rest days.

The 230 training days include 324 planned training sessions with a duration of 90 minutes each or a total of 628 training hours. Within 55 competition days, there are 80 matches planned to take place within 110 astronomical hours. The total annual training load (within a training and sports-competition year) is 738 hours.

Italy

In 52 weeks, 22 training, 22 competition, 3 camp and 4 holiday microcycles are planned. Of the 365 days a year, 145 days are training days (including camps), 55 are competition days, and 167 days are rest days.

The 145 training days include 145 planned training sessions with a duration

	<p>of 120 minutes each or a total of 290 training hours. Within 55 competition days, there are 60 matches planned to take place within 54.5 astronomical hours. The total annual load (within a training and sports-competition year) is 344.5 hours.</p> <p>Conclusions</p> <ol style="list-style-type: none"> 1. Both models of annual sports training are tricyclic; however, in Italy the sequence includes, as follows: autumn, winter and spring-summer cycles, and in Bulgaria: winter, spring-summer and autumn cycles. 2. Both models of sports training have identical macro and meso structure; however, the annual schedules of Bulgarian athletes set almost twice the volume of training and competitive loads – with a respective ratio of 1.9-1. In terms of individual work, the planned activity of the Italian players exceeds that of the Bulgarian ones by 25%. 3. There is a significant difference in the sports training of the surveyed athletes in terms of realization of the goals set. While Italian players exceed 90% of the planned annual load, Bulgarian athletes achieve only 20%.
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12.

Title	THE CONTRIBUTION OF THE FIELD HOCKEY SECTOR AT NSA "VASIL LEVSKI" FOR THE DEVELOPMENT OF HOCKEY IN BULGARIA
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Antonov, A., E. Vitanova
Abstract	<p>Introduction</p> <p>Four years after the establishment of the Bulgarian Field Hockey Federation (BFHT) on June 6, 1991, the management board of the federation undertook the initiative to include a sports specialty at the National Sports Academy “Vasil Levski“ for training and specialization of field hockey coaches. In the spring of 1995, the first standards for candidate students and curriculum were developed in accordance with the requirements for training of coaches in the Bachelor’s degree.</p> <p>The proposal of BFHF was accepted by a decision of the Academic Council, and in the academic year 1995/96 a sports specialty and a separate sector “Hockey” were established at the Department of Football and Tennis at the Faculty of Sport at NSA “Vasil Levski”. The examination commission included Assoc. Prof. Dr. Ioto Dryanovski – Chairman, Stanimir Chakalov and Petar Gunchev – members. They conducted the first admission exam for the academic year 1995/96 and accepted the first class of students – hockey specialists: Dimitar Dragoev, Ilian Peychev, Olga Aleksieva and Silvia Ivanova. On September 10, 1995, by a decision of the Department of Football and Tennis, the first part-time field hockey lecturers were appointed – Antonio Antonov and Chavdar Ivanov.</p> <p>Methods</p> <ul style="list-style-type: none"> - Study of the twenty-year-long activity of the “Hockey” Sector and systematization of the data from the research by spheres / directions – educational, scientific, sports and competition. - Subjecting the results to theoretical-logical and mathematical-statistical analysis – variance and comparative.

Aim

The aim of the study is to objectify the results and achievements of the educational, scientific and sports activities of the “Field Hockey” Sector and the effect of introducing the specialty of “Field Hockey” in NSA “Vasil Levski” on the development of Bulgarian hockey in the period after 1995.

Conclusions

The analyses and discussion of the results give us grounds to make the following summaries and conclusions:

1. The introduction of the specialty “Field Hockey” at the Department of Football and Tennis at NSA “Vasil Levski” has had an impact on the qualification growth of the coaching staff in the field of hockey immediately after the establishment of BFHF. Since 1995 to the present, 159 students have enrolled in the Bachelor’s degree program, 66 of which (42%) have completed their coursework and 53 (33.3%) have graduated. 15 students have enrolled in the Master’s degree programs, 11 of which (73%), including 6 foreigners, have completed their studies. In the field of hockey there have been 4 dissertations defended, and one is currently in the process of defense. The educational activity in the sector is carried out by 13 lecturers – 1 habilitated (Associate Professor) and 12 part-time lecturers, including 1 doctor.

2. Published books, manuals, monographs, and scientific publications are a product and a prerequisite for the implementation of the results of research and applied activities in the training and competition process.

3. The sports and technical achievements of the students specializing in hockey at the NSA “Vasil Levski” when they participate in international and state championships as well as tournaments at club and national level prove the significant role and place of the NSA “Vasil Levski” in the development of Bulgarian hockey. HC “NSA” is the most successful Bulgarian hockey club in the 25-year history of the Bulgarian Field Hockey Federation.

Recommendations

1. Regarding the low percentage of semester graduates and graduate students, we recommend the hockey community (Federation and hockey clubs) to educate, prepare and encourage the enrolment of athletes with higher educational potential and high motivation to acquire knowledge and competencies in the field of sports. Such a practice would give graduates a better opportunity for successful realization as coaches, managers, referees or administrators in the field of hockey.

2. Students with scientific potential should be supported to continue their higher education in the Master's and PhD degree programs, which will create prerequisites for the development and improvement of their specific knowledge in the field of sports.

3. We also recommend the implementation of a practice which has been well established in the West regarding student sports – namely, elite athletes should be supported by the NSA “Vasil Levski” in order to combine successfully the sports and competition process with the educational and scientific work. This approach will motivate elite athletes to choose NSA over other universities.

Title	METHODOLOGY FOR OPTIMIZATION OF SHOOTING WHEN PERFORMING A PENALTY CORNER – INDOOR HOCKEY
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Antonov, A., S. Chavdarov
Abstract	<p>Introduction</p> <p>The structure and model of the preparation and implementation of the training tools set in the annual plan are among the main criteria and factors for the effectiveness of the training process.</p> <p>The training of elite hockey players in all stages of the training process is multi-directional, so it is important to find the rational sequence and the optimal combination when using training tools to achieve maximum effect. Structurally, the process of sports training is based on objectively existing norms defining sportsmanship. These norms determine the factors, effectiveness and results of the competitive activity, the optimal structure of the sports training of hockey players, the specific adaptation to the different means and methods of pedagogical influence, the individual features of the athlete, the stages of long-term training and other relevant aspects.</p> <p>The aim of the report is to reveal – through research, analysis and summary of the available literary sources related to educational and practical training as well as methodology, including schedules, training programs and reports – the structure and model indicators characterizing the efficiency of sports training of elite athletes in hockey in Bulgaria and Italy within one sports-competitive year.</p> <p>The set goal requires the achievement of the following tasks:</p> <ol style="list-style-type: none"> 1. Revealing the structure, the model and the model indicators – quantitative and qualitative, characterizing the sports training of elite hockey players in Bulgaria and Italy; 2. Analysis of the efficiency of the training process and the competitive activity in the system of elite women's hockey in Bulgaria and Italy. 3. Comparative analysis between established model indicators characterizing sports training in Bulgaria and Italy. <p>The object of the study was the annual sports training of 12 elite hockey players from Bulgaria (National Team and HC NSA) and 22 ones from Italy (Lorenzoni – Bra) in the period 2010-2012.</p> <p>The study focuses on a number of factors, such as structure, indicators, and realization, which influence the efficiency of the annual sports training.</p> <p>Recapitulation:</p> <ol style="list-style-type: none"> 1. Both models of annual sports training are tricyclic; however, in Italy the sequence is as follows: autumn, winter and spring-summer cycles, and in Bulgaria: winter, spring-summer and autumn cycles. 2. In both models of sports training we observe preparatory, competition and transitional mesocycles, as well as similar in content microcycles. 3. It is also evident that the planned parameters and indicators in the annual schedule of the athletes from Bulgaria significantly (almost twice) exceed those planned in Italy. 4. There is also a significant difference in the reporting and accomplishment

	<p>of the parameters of the annual schedules of athletes in Bulgaria and Italy. In Bulgaria the implementation is about 20% of the planned, while in Italy it is 80%.</p> <p>5. In Italy 90% of the planned sports and competition activity is realized, while in Bulgaria – only 20%.</p> <p>Conclusions</p> <p>The study establishes similar structural models of the annual planning of sports training of hockey players in Bulgaria and Italy. Quantitative indicators – the planned annual load of Bulgarian athletes significantly exceeds that of Italians.</p> <p>Qualitative indicators – the realization of the training (80%) and competition (90%) parameters planned in the annual schedules by the Italian athletes is significantly higher than the realization of the same by the Bulgarian athletes (20%).</p> <p>This fact, in our opinion, is one of the main reasons for the significant difference in the class and rankings of the teams from the two countries at the international level – Italy is in 15th place in the world rankings while Bulgaria is only in 64th place.</p> <p>Based on the above, we can make the following recommendations regarding the development of sports and competition activity in Bulgaria:</p> <ol style="list-style-type: none"> 1. Bulgarian hockey specialists should optimize the realization of the planned indicators. 2. There should be organized competitions in disciplines that allow athletes to actively participate in sports and competitive activities (hockey 5 and indoor hockey).
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14.

Title	MORAL STANDARDS GOVERNING THE ETHICS OF MODERN SPORT MODEL
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Antonio Antonov
Abstract	<p>Introduction:</p> <p>Morality (Latin: <i>Mores</i> – morals) is a form of social consciousness, a social institution performing functions of regulating human behavior in all areas of public life, without exception. By moral necessity, needs and interests of society or social groups express themselves by forming generally recognized requirements (rules of conduct), backed by the power of grassroots example, habit, custom, and public opinion. Ethics (Greek: <i>Ethos</i> – habit, custom) is one of the most ancient theoretical subjects, which studies morality. Sports Ethics is defined according to the established moral norms – the Universal Human Values, principles and rules of conduct. “Fair Play”, as a general concept of overlapping and affirming the ideals of sport, requires competition rules and sportsman spirit of the game, players’ respect for themselves, their teammates, opponents and all participants in the race, no tolerance for taunting, arrogant, vulgar and discriminatory conduct, strict adherence to anti-doping rules, continuous “Fight” against corruption and violence in sport.</p> <p>Ethics and morals had, have, and will have a significant role in the development of sport in all fields and areas. Identification, characterization</p>

	<p>and compliance with moral norms that construct the ethical model of sport are obligatory in the policy development of modern sports society.</p> <p>Methods</p> <p>Our aim is to discover and characterize individual moral standards – categories that make up the structure of the ethical model of modern sport, their role, their place and importance in the construction of values and personality of the athlete, and the impact on the development of sport policy on a global scale.</p> <p>To realize this purpose, we studied the available literature on the problem. Classifying the information received, we subjected the results to theorist logical analysis, and discussion brought out important conclusions regarding sports practice.</p> <p>Conclusion</p> <p>It is known that nature determines the type of personality and morality – behavior, i.e. ethics. It is customary to associate people who have good character and sports ethics as respectful, polite, honorable, fair, honest, and responsible. Although sport is mostly focused on results, without the dilemma “is someone good or bad?”, sportsmanship makes it “obligatory” to involve in sports people who have a good character and a good heart. The great athlete, coach or referee, regardless of their age, gender, religion, education or marital status, must be first and foremost – a good person already. Finally, sports ethics oblige all of us as a civilized society with a desire to live and work productively in harmony, peace and prosperity for the image of the sport, first – to instill, second – to observe, and third – to build on the generally accepted moral norms of behavior.</p> <p>Objectifying of moral norms is a complex and controversial matter, which is difficult to define and has important social and public significance, regarding both elite and grassroots sport. Public displays of sports ethics and moral behavior, e.g. participation in campaigns and initiatives for “fair play” and against doping, corruption, violence, aggression, and racism in sport, by many of today's sports “superstars”, such as Leon Messi – football, Kobe Bryant – basketball, Grigor Dimitrov – tennis, Lucian Aimar – hockey, and many more, are crucial to the education and development of young athletes and formation of criteria for display of humanity and humanism. Following the example of its sports idols, today's talent will build morally sound models of sports ethics in the future.</p>
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15.

Title	MODELLING THE SYSTEM OF NATIONAL FIELD HOCKEY COMPETITIONS IN BULGARIA
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Antonio Antonov
Abstract	<p>Introduction:</p> <p>The sport of hockey has various names (e.g. hockey, field hockey; grass hockey). It is a kind of collective game that has its origins in the Commonwealth and is most well known as field hockey. In Bulgaria the game has been developing more intensively since 1991, with the establishment of a national governing body – the Bulgarian Field Hockey Federation (BFHF).</p>

	<p>After 2000 it is one of the most extensively developing sports in the country in terms of club network growth, number of youth players, and the establishment of a sustainable competition structure with national, regional and community championships and tournaments. The national system of competitions is run by an annual Hockey Competitions Regulations.</p> <p>Our study comprises a course of 23 years (1991-2013) that witnessed the conduct of 22 consecutive championships. Models used for the realization of the national hockey competitions calendar is based on two of the most popular three-cycle system of annual sporting preparation – “autumn-winter-spring” and “winter-spring-autumn”. The former model is implemented within two calendar years while the latter within one calendar year.</p> <p>The study traces the impact of different models on the dynamics of a series of independent indicators: number of competitors by gender and age group, number of participating clubs and number of planned and conducted championships – rankings, age group and gender.</p> <p>The analysis of the results shows that the models used by the BFHF, based on two fundamentally different systems, have had a mixed impact on the dynamics of examined indicators.</p> <p>In conclusion, it can be said that the dynamics of indicators, although diverse for separate competition years, reveal a positive trend. The largest growth in the studied indicators was witnessed between 2000 and 2007. After that, with a few exceptions, a period of stagnation occurred. This, however, was not due to the newly imposed by the BFHF model of national competition structure after 2011 when a transition from “autumn-winter-spring” to “winter-spring-autumn” model occurred. The peculiar “plateau” that reflects the line of competition indicators’ dynamics serve to conclude that quantity development has probably been transformed in quality.</p>
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16.

Title	MODEL CHARACTERISTICS OF HOCKEY SPORT PREPARATION IN BULGARIA
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Antonio Antonov
Abstract	<p>Introduction:</p> <p>Modeling of sport preparation is achieved through the development of basic models which represent the most specific model characteristics – qualitative and quantitative, with reference to their importance in the training process and competition activities. The aim of this research is to model hockey sport preparation in Bulgaria, revealing the basic quantitative indexes – model characteristics of planning.</p> <p>In order to achieve our aim, we studied the existing literature and normative resources on the problem. We systematized the acquired information, and we used logical, theoretical, variance and contrastive analysis to process it. The results from our research definitely prove that there is a normative model developed for planning the sport preparation of Bulgarian hockey players with quantitative indexes – model characteristics.</p>

	<p>In conclusion, long-term sport preparation of hockey players is a continuous process, involving a 10-12 year period, when beginners gradually go through all stages of development, reaching the top level performance. We have given the values of two of the most important quantitative indexes of sport preparation in Table 2 – training hours (TH) and competition hours (CH), characterizing the volume of training and competition activity in 8- to 20-year-old players. The results show that a period of 12 years is needed for the development of elite hockey players, including a schedule of planned 3160 hours of training and 660 hours of competition activity, realized in 2300-2500 training sessions and participation in 400-500 official matches. The relationship between training activity and competition activity expressed in percentage is 83% to 17%. The percentage correlations between the training hours of different age groups and their respective total volume of training work logically determines the greatest percent in 19-20-year-olds (31%) and the smallest in 8-10-year-olds (7%). In this study we do not analyze the percentage representation of the smallest children (<8), because the Bulgarian hockey model of sport preparation does not include this age group. Analyzing the percentage correlation of the competition hours in different age groups, we distinguish the same trend. The greatest percent of competition activity in comparison to the total volume is achieved in 19-20-year-old (30%) and the smallest – in 8-10-year old players (9%).</p>
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17.

Title	SEVERAL INDICATORS FOR THE DEVELOPMENT OF FIELD HOCKEY IN BULGARIA FOR THE PERIOD OF TWENTY YEARS
Indicator	<i>Papers and reports published in non-indexed peer-reviewed journals or published in edited collective volumes</i>
Author(s)	Dimitrieska, T., A. Antonov
Abstract	<p>Introduction:</p> <p>Several chronological indicators are presented for the development of hockey in several countries in the world; in that context as a basis for further progress, the indicators are also analyzed in two phases over the period of the last 20 years. The first phase is characterized by the popularization of hockey, and the second phase – by the rapid development of the Bulgarian Hockey Federation (BHF) and the appearance of children and youth hockey clubs. The purpose of the present paper was, through studying the period of 20 years of field hockey development in Bulgaria, to determine the goals and objectives for the future development and popularization of hockey.</p> <p>From the analyses of the development of hockey in Bulgaria, we have come to a conclusion that in Bulgaria today there are 48 hockey clubs, approximately 3000 children and seniors are playing professionally hockey. In the past 20 years BHF has taken part in 27 Balkan Championships (16 in men's competitions and 11 in women's competitions) and has won 7 first, 14 second and 5 third places. Besides the Balkan Championships, BHF with its team selections has taken part in 27 European Championships – 18 in men's competitions and 9 in women's competitions.</p>